



Technical data Z+F IMAGER[®] 5006h



Z+F IMAGER[®], front view



Z+F IMAGER[®], side view

The imaging 3D laser measurement systems are applicable in the fields of digital planning of factories, industrial plants, architecture, protection of historic monuments, landscape and virtual reality. They are based upon the spot Z+F Laser Measurement System LARA.

Laser measurement system

Ambiguity interval:	79 m
Min. range:	0.4 m
Resolution range:	0.1 mm
Max. data acquisition rate:	1 016 727 pxl/sec.
Linearity error up to 50m: ¹	≤ 1 mm
Range noise at 10 m: ^{1 2}	
> Reflectivity 10% (black):	1.2 mm rms
> Reflectivity 20% (dark grey):	0.7 mm rms
> Reflectivity 100% (white):	0.4 mm rms
Range noise at 25 m: ^{1 2}	
> Reflectivity 10% (black):	2.6 mm rms
> Reflectivity 20% (dark grey):	1.5 mm rms
> Reflectivity 100% (white):	0.7 mm rms
Range noise at 50 m: ^{1 2 3}	
> Reflectivity 10% (black):	6.8 mm rms
> Reflectivity 20% (dark grey):	3.5 mm rms
> Reflectivity 100% (white):	1.8 mm rms
Range drift over temp. (-10°– 45°C):	negligible due to internal reference

Optical transceiver

Laser:	visible
Beam divergence:	0.22 mrad
Beam diameter at 1 m distance:	3 mm circular
Laser safety class:	3R (ISO EN 60825-1)

Deflection unit

System vertical:	Rotating mirror
System horizontal:	Rotating device
Field of view vertical:	310°
Field of view horizontal:	360°
Resolution vertical:	0.0018°
Resolution horizontal:	0.0018°
Accuracy vertical: ¹	0.007° rms
Accuracy horizontal: ¹	0.007° rms
Max. scanning speed vertical:	≤ 50 rps
Typ. Scanning speed vertical:	25 rps


Resolution

Resolutions:	Pixel/360° (vertical, horizontal)	Scanning time (low quality ^b) 50 rps	Scanning time (normal quality) 25 rps	Scanning time (high quality ^b) 12,5 rps
“preview”:	1 250	13 sec.	25 sec	50 sec
“middle”:	5 000	50 sec.	1 min 40 sec	3 min 20 sec
“high”:	10 000	1 min 41 sec	3 min 22 sec	6 min 44 sec
“super high”:	20 000	3 min 22 sec	6 min 44 sec	13 min 28 sec
“ultra high”:	40 000	-	26 min 44 sec	53 min 20 sec
Max. resolution for selections:	100 000			



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 <p>Z+F IMAGER[®] on Manfrotto tripod</p>	<i>Miscellaneous</i>	
	Tilt measurement:	
	> Resolution:	1/1 000°
	> Accuracy (zero point): ⁴	1/500°
	Data interface:	Ethernet / USB 2.0
	Data storage:	Internal HDD (≥ 60GB)
	Communication interface:	Ethernet / WLAN
	Integrated operation panel:	
	> Display:	4 Lines
	> Keypad:	6 Buttons
	Power supply:	
	> Input voltage:	24V DC (scanner) 90–260V AC (power unit)
	Power consumption:	65 W max.
	Battery life time:	
> Changeable battery pack:	2.5 h	
> External battery (TRAPP-15-24):	4 h	
Ambient conditions:		
> Calibrated temperature:	-10°C – 45°C	
> Storage temperature:	-20°C – 50°C	
> Humidity:	non-condensing	
> Target reflectivity:	no retro-reflectors	
> Illumination:	all conditions from darkness to daylight	
<i>Dimensions and weights</i>		
Scanner (w x d x h):	286 mm x 190 mm x 372 mm	14 kg
Bottom of scanner to horizontal axis:	242 mm	
Tripod:		
> Height:	approx. 80 cm – 140 cm	9 kg
> Diameter:	approx. 120 cm	

1) Detailed explanation on request - contact: info@zf-laser.com

2) Data-rate of 127 000 pixel / sec., 1 sigma range noise, unfiltered raw data, in high power mode

3) all values are extrapolated

4) not recommended for exact measurements, should only be used as an overview

5) only recommended for selection scans, as the data will be too large for further post processing

6) Doubling ("low quality") and halving ("high quality") of the data rate (pixels / sec), increases the range noise on each pixel theoretically by 40% ("low quality") or decreased it by 40% ("high quality") in comparison to "normal quality". Related to the roughness of the measured surface, the difference in reality can be less, especially when scanning objects with bright surfaces in short distances, e.g. indoor.

7) Zero can be determined by automatic alteration